of FIG. **4**B from the bolometer detector of FIG. **4**A resides in that it does not have cavity **338**. Therefore, thermal energy of incoming infrared rays is diffused quickly to the substrate and little temperature variation occurs with the bolometer material. Since the resistance value and the temperature coefficient are the same electric characteristics as those of the first bolometer detector of FIG. **4**A, the bolometer detector of FIG. **4**B is used advantageously to obtain a reference voltage for a bridge circuit.

In FIGS. **4**C and **4**D, the bolometers shown have structures partially modified from the structure shown in FIG. **4**A such that thermal energy of incident infrared rays may not be provided to the bolometer detector. To this end, the bolometer detector of FIG. **4**C has infrared ray reflection film **336** on the infrared ray incoming face thereof while the bolometer detector of FIG. **4**D has light interception plate **337** provided above bolometer material **333**. Accordingly, the bolometer detectors of the structures of FIGS. **3**C and **3**D can be used as second bolometer detectors **112** shown in FIG. **2**.

Next, a method of producing the infrared focal plane array detector according to the present invention will be described with reference to FIGS. **4**A to **4**D. The method of producing the infrared focal plane array detector according to the present invention includes a first step of forming unit cell selections witches for selectin bolomete[00f8] detectors **333**, differential amplifiers (not shown) and other necessary elements on substrate **340**, a second step of forming sacrificial layer **339** on the substrate, a third step of forming film **333** made of a bolometer material and protective film **334** on sacrificial layer **339** such that film **333** maybe held between protective film **334**, a fourth step of etching film **333** made of the bolometer material into a predetermined shape and covering film **333** with protective film **334**, a fifth step of forming infrared ray absorption film **332** or infrared ray reflection film **336** on the bolometer material and patterning the infrared absorption film **332** or infrared ray reflection film **336** into a predetermined shape, a sixth step of removing sacrificial layer **339** except that at a predetermined location including the third bolometer detectors to form cavity **338**, and a seventh step of containing space **338** under a vacuum state. In this instance, in order to make the thermal characteristics and the electric characteristics uniform, the first bolometer detectors, second bolometer detectors and third bolometer detectors must be produced from the same material by the same process.

Since the infrared focal plane array detector according to the present invention is constructed in such a manner as described above, the following effects are anticipated.

The first effect resides in removal of offset components. Since only a net signal from which offset components arising from background radiation and joule heat generation are removed is extracted, a sufficiently high gain can be taken after the signal is detected.

The second effects resides in reduction of a temperature drift. This eliminates the necessity for FPN correction to be performed frequency during operation as with conventional infrared focal plane array detectors, and augments the operability of an infrared camera.

It is to be understood, however, that although the characteristics and advantages of the present invention have been set fort[0088] in the foregoing description, the disclosure is illustrative only, and changes may be made in the arrangement of the parts within the scope of the appended claims.

What is claimed is:

1. An infrared focal plane array detector wherein a plurality of bolometer detectors are arranged in a two-dimensional array forming columns and rows on a substrate, and each of said plurality of bolometer detectors is successively selected to detect an infrared ray incoming to its position said plurality of bolometer detectors comprising:

at least one first bolometer detector and at least one second bolometer detector and at least one third bolometer detector provided on said substrate, wherein

said at least one first bolometer detector has, between said at least one first bolometer detector and said substrate, a thermal isolation structure, for thermally isolating said at least one first bolometer detector and said substrate from each other, said at least first bolometer detector being disposed in an infrared detection area on said substrate for receiving infrared rays incoming thereto;

said at least one second bolometer detector has a thermal isolation structure, between said at least one second bolometer detector and said substrate, for thermally isolating said at least one second bolometer detector from said substrate, said at least one second bolometer detector receiving no infrared rays incoming to said infrared focal plane array detector;

said at least one third bolometer detector is formed on said substrate without having a thermal isolation structure between said at least one third bolometer and said substrate; and

said bolometer detectors forming a circuit for removing an offset in output signals therefrom and reducing a temperature drift thereof.

2. The infrared focal plane array detector according to claim **1**, further comprising another third bolometer detector,

wherein said at least one first bolometer detector is disposed in said infrared detection area, said at least one third bolometer detector is disposed on the same column as said at least one first bolometer detector, and said at least one first and said at least one third bolometer detectors are connected to each other at a first junction;

wherein said at least one second bolometer detector is disposed on the same row as said at least one first bolometer detector, said another third bolometer detector is disposed on the same column as said at least one second bolometer detector, and said second and said another third bolometer detectors are connected to each other at a second junction; and

wherein a bridge circuit is formed from the four bolometer detectors, and said first junction and said second junction form midpoints for detecting a difference in voltage of said bridge circuit.

3. The infrared focal plane array detector according to claim **2**, wherein said infrared focal plane array detector includes at least two second bolometer detectors and at least two switching elements, said at least two switching elements selectively using one of said at least two second bolometer detectors in said bridge circuit.

4. The infrared focal plan array detector according to claim **2**, further including a switching transistor for selecting said at least one first bolometer detector and a differential